

# ECOFREC™ 202



**No clean, very low residue flux**  
**Lead Free soldering**

## FEATURES

**ECOFREC™ 202** is a very low dry extract flux which can be used for lead free soldering, by foam or by spray. It has been developed to have a good wettability on different PCB lead free finish as OSP, Ni/Au, Sn, Ag.

## SPECIFICATIONS

|                                  |                   |
|----------------------------------|-------------------|
| Appearance                       | Colourless liquid |
| Density at 20°C                  | 0.814 – 0.822     |
| Flash point                      | 16°C              |
| Dry extract, 3 h at 105°C        | 1,9 %             |
| Halogen Content                  | no halogen        |
| Acid index, mg KOH/g of solution | 19                |

## CHARACTERISTICS

Its activation system, without any halide (Fluoride, Chloride or Bromide) and no amine, is eliminated after wave soldering, without leaving any visible residue on printed circuit boards.

Taking into account the absence of residue after wave soldering, **ECOFREC™ 202** allows no interference with electrical probes.

After ageing the cards in a humidity chamber at different temperatures and under bias, the performance in terms of surface insulation resistance are particularly high. The SIR on IPC B25 Pattern is around  $10^{10}$  ohms after 28 days, at 40°C, 93 % RH under 5 Volts or 28 days at 85°C, 85 % RH under 50 Volts.

Taking into account the non aggressiveness of its residue, **ECOFREC™ 202** is recommended when the cleaning step of PCB is eliminated.

| FUNCTIONAL TESTS      | Results                  | Procedures           |
|-----------------------|--------------------------|----------------------|
| Classification        | ORL0                     | ANSI/J-STD-004       |
| Copper mirror         | pass                     | ANSI/J-STD-004       |
| Silver chromate paper | pass                     | ANSI/J-STD-004       |
| SIR                   | passed (see curve below) | IPC TM 650           |
| Bono test             | passed                   | INVENTEC MO.SB.10029 |

## PACKAGING

|               |      |
|---------------|------|
| Plastic drums | 20 l |
|---------------|------|

## STORAGE & SHELF LIFE

**ECOFREC™ 202** must be stored in a cool and well-ventilated place (between 5° and 30°C) in securely closed packaging, protected from freezing. A shelf life of no longer than a year is recommended.

**ECOFREC™ 202** must be stored at the temperature of the production plant for 12 hours before use.

## USE CONDITIONS

The spray application allows a uniform flux coverage on the circuit.

After flux application, preheat the printed circuit until the topside board temperature reaches 110-130°C prior to entering the solder wave. The temperature level obtained after preheat and solder wave will allow to eliminate all the residue and therefore to have a good cosmetic aspect of the PCB.

Flux Control : Contrary to some low residue flux, the flux control can easily be done by adjusting the density to its nominal value. The acid index is a complementary control but is not compulsory.

The density of **ECOFREC™ 202** must be checked regularly and must be kept at nominal density by adding Diluent n°1. Depending on the PCB and components oxidation level, it is possible to work in a density range of 0,818 to 0,830 without SIR failure.

In practice, INVENTEC recommends adding **ECOFREC™ 202** and Diluent n°1 alternately, to maintain the level in the flux equipment. Temperature must be taken into account while density measurement - (cf. figures 1 & 2). To ensure performance consistency, it is recommended to completely renew the flux every 40 hours work, depending on the production rate.

## HSE

**ECOFREC™ 202** must be handled in a well-ventilated room far from any flame. Vapours must be evacuated from flux and solder work stations by efficient aspiration.

Refer to Material Safety Data Sheet before use.

No issues when used as recommended.

**Although the conformity to ROHS 2002/95CE applies to EQUIPMENT put on the market and not to a component in particular, we warranty that this product contains less than 0.1% of mercury, lead, chromium VI, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) and less than 0.01% for the cadmium, in accordance with the decision of The European Commission dated 18/08/2005, fixing the maximal concentration values.**

*This data is based on information that the manufacturer believe to be reliable and offered in good faith. In no event will INVENTEC be responsible for special, incidental and consequential damages. The user is responsible to the Administrative Authorities (regulations for the protection of the Environment) for the conformity of his installation.*

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Figure 1

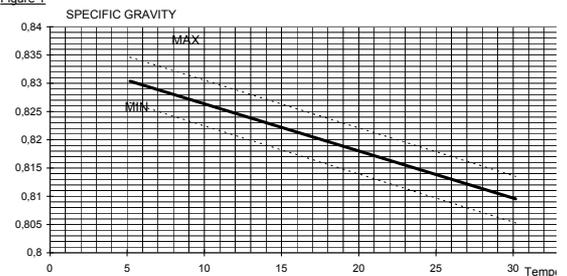


Figure 2

Volume of Thinner N°1 to be added to 1 liter of Ecofrec to get the needed specific gravity  
 1st example : from 0.830 to 0.820, add 285 ml Thinner N°1  
 2nd example : from 0.824 to 0.814, add 345 ml Thinner N°1

